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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,705	12/11/2000	Shinji Koyano	Q62174	2917

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SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

GRIER, LAURA A

ART UNIT PAPER NUMBER

2644

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,705

Applicant(s)

KOYANO ET AL.

Examiner

Laura A Grier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,8,11,13,15 and 17 is/are rejected.
- 7) ☒ Claim(s) 3-7, 9-10, 12, 14, and 16 is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayase, U. S. Patent No. 5191619 in view of Matsuda et al., U. S. Patent No. 4488012.

Regarding **claim 1**, Hayase disclose a bass enhancing device for a loudspeaker system. Hayase's disclosure comprise a loudspeaker (2), a vibration detecting means (4) for detecting the vibrations of the speaker unit, wherein as it is well known the art, vibration characteristics includes the amplitude characteristics as well, and a feedback circuit indicative of positive feedback (figure 1 and col. 4, lines 33-59). However, Hayase fails to specifically disclose the detecting means directly in relation to the diaphragm of the speaker even though the amplitude of the speaker is effected, therein. However, the examiner maintains that an amplitude detecting means for a loudspeaker or speaker was well known in the art.

Regarding the amplitude detecting means, in a similar field of endeavor, Matsuda et al. (herein, Matsuda) discloses a MFB loudspeaker. Matsuda's disclosure comprises a loudspeaker with a detecting element for the detecting the vibratory characteristics (amplitude) of the speaker located on the diaphragm (abstract and figure 4).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Hayase by implementing a detecting element for the purpose detecting the amplitude of a speaker's diaphragm for the purpose of reducing distortion caused by a system vibration and thus improving the sound pressure vs. frequency characteristics of a loudspeaker.

3. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro et al. in view of Matsuda.

Regarding **claim 1**, Noro et al. discloses an impedance compensation circuit in a speaker driving system. Noro discloses a speaker (figure 1-reference 3), which reads on a speaker; a detection element (figure 1-reference 1); and a feedback circuit coupled with an adder for positively feeding back an output to the amplifier to drive the speaker (col. 3, lines 33-36), which reads on a positive feed back means. However, Noro's detection element fails to specifically disclose detecting an amplitude value of a diaphragm of the speaker. The examiner maintains that such a detecting means was well known in the art.

Regarding the amplitude detecting means, in a similar field of endeavor, Matsuda et al. (herein, Matsuda) discloses a MFB loudspeaker. Matsuda's disclosure comprises a loudspeaker with a detecting element for the detecting the vibratory characteristics (amplitude) of the speaker located on the diaphragm (abstract and figure 4).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Nora by implementing a detecting

element for the purpose detecting the amplitude of a speaker's diaphragm for the purpose of reducing distortion caused by a system vibration and thus improving the sound pressure vs. frequency characteristics of a loudspeaker.

4. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro, Matsuda and Yokoyama (hereinafter, Noro-Matsuda).

Regarding **claim 2**, Noro-Matsuda discloses everything claimed as applied above (see claim 1). Noro further discloses an integrator, indicative of the integrating means. However, Noro fails to specifically disclose a velocity detecting means. The examiner maintains that such detecting means was well known in the art. Yokoyama further teaches detector means comprising a system of detecting (column 15, lines 31-37 and 56-63) indicative of a velocity detecting means. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Noro-Matsuda by incorporating a velocity detecting means for the purpose of detecting the velocity of the speaker .

5. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro, Matsuda.

Regarding **claim 8**, Noro et al. discloses an impedance compensation circuit in a speaker driving system. Noro discloses a speaker (figure 1-reference 3), which reads on a speaker; a detection element (figure 1-reference 1); and a feedback circuit coupled with an adder for positively feeding back an output to the amplifier to drive the speaker

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(col. 3, lines 33-36), which reads on a positive feed back means; and Noro further discloses an integrator, indicative of the integrating means, wherein integrators or integrating means are to include a low pass filter. However, Noro's detection element fails to specifically disclose detecting an amplitude value of a diaphragm of the speaker. The examiner maintains that such a detecting means was well known in the art.

Regarding the amplitude detecting means, in a similar field of endeavor, Matsuda et al. (herein, Matsuda) discloses a MFB loudspeaker. Matsuda's disclosure comprises a loudspeaker with a detecting element for the detecting the vibratory characteristics (amplitude) of the speaker located on the diaphragm (abstract and figure 4).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Nora by implementing a detecting element for the purpose detecting the amplitude of a speaker's diaphragm for the purpose of reducing distortion caused by a system vibration and thus improving the sound pressure vs. frequency characteristics of a loudspeaker.

6. Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noro et al. in view of Matsuda.

Regarding **claims 11, 13, 15 and 17**, Noro et al. discloses an impedance compensation circuit in a speaker driving system. Noro discloses a speaker (figure 1-reference 3), which reads on a speaker; a detection element (figure 1-reference 1); and a feedback circuit coupled with an adder for positively feeding back an output to the amplifier to drive the speaker (col. 3, lines 33-36), which reads on a positive feed back

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means and Noro further discloses an integrator. However, Noro's detection element fails to specifically disclose detecting an amplitude value of a diaphragm of the speaker. The examiner maintains that such a detecting means was well known in the art.

Regarding the amplitude detecting means, in a similar field of endeavor, Matsuda et al. (herein, Matsuda) discloses a MFB loudspeaker. Matsuda's disclosure comprises a loudspeaker with a detecting element for the detecting the vibratory characteristics (amplitude) of the speaker located on the diaphragm (abstract and figure 4).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Nora by implementing a detecting element for the purpose detecting the amplitude of a speaker's diaphragm for the purpose of reducing distortion caused by a system vibration and thus improving the sound pressure vs. frequency characteristics of a loudspeaker.

Allowable Subject Matter

Claims 5-7 are allowed.

Claims 3-4, 9-10, 12, 14, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

The applicant essential argues that prior art used fails to teaches the limitation of the detecting the amplitude and/or vibrations of the speaker's diaphragm. The examiner accepts the applicant's arguments. However, the prior art is still considered in the rejections for pertinent features. Further the examiner has provided prior to support amplitude detection of a speaker's diaphragm and means of positive feedback to support the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)


Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

LAG

June 2, 20020


FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600